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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/751,734	01/06/2004	Kiyoe Ochiai	118247	3989
25944	7590	10/19/2005		
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			EXAMINER HIRUY, ELIAS	
			ART UNIT 2837	PAPER NUMBER
DATE MAILED: 10/19/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/751,734

Applicant(s)

OCHIAI, KIYOE

Examiner

Elias B. Hiruy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 7-13 is/are rejected.
- 7) ☒ Claim(s) 2-6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

**Response to Argument**

1. Applicant's arguments filed on 07/13/05 is received and entered into record.
2. The objection to the drawing is withdrawn in view of applicant replacement sheet submitted in the amendment.
3. Claims 1 rejection under 35 U.S.C. 112, second paragraph, is withdrawn in view of applicant's amendment.
4. Rejection of claims 1-6 under 35 U.S.C. §103 (a) is withdrawn as the applicant argument has traversed the rejection set in the earlier office action. However, claim 1 and 13 are rejected in view of the new arts discovered in the updated search. Claims 2-6 are objected as having allowable subject matter.
5. Although the examiner appreciates applicant's detailed discussion in attempt of traversing the rejection of claim 7-12, the explanation fails to fully overcome the rejection as set-froth in the previous office action. In the June 16, 2005 interview, the applicant representative was made aware of the deficiencies that the examiner was concerned with, which were the bases for the rejection of claim 7-12.

The examiner has found the argument made to overcome the rejection contradictory to what is taught in the specification and claimed. The argument made by the applicant on page 7 quoted for clarity purpose herein states:

*"The control CPU 184 then determines whether the sum of motor power  $P_m$  and generator power  $P_g$ , namely  $P_m + P_g$ , is 0 or not (S5) (page 13, lines 31-33). As explained by the Applicant, "If the sum  $P_m + P_g$  is 0, control CPU 184 disconnects DC*

*power supply 30 from neutral points M1 and M2 to drive motor generators MG1 and MG2."*

Further, on page 8, the applicant presents an argument which contradicts the disclosure and even the argument which was set-forth by applicant on the previous page. The statement is quoted herein for clarity purpose:

*"the Examiners were misinterpreting the phrase 'a third step of disconnecting, when said sum is equal to zero, a power supply from respective neutral points of two three-phase coils included in said 2Y motor,' as recited in claims 7 and 10 (emphasis added). As clearly recited in claims 7 and 10, the power supply from the respective neutral points of two of the three phase coils included in the 2Y motor is reduced in the third step."*

Page 8 argument is clearly in contradiction with the teaching of the disclosure and further nowhere in claim 7 nor in claim 10 do the claims state that "the power supply from the respective neutral points of two of the three phase coils included in the 2Y motor is reduced in the third step." Therefore, the remarks and arguments made do not clearly address the issues raised in the previous office action apart from providing applicants interpretation of the claims without a clear support from the specification. In addition, the explanation how the motor generator sum could be zero applicants teaches about the following formula:

$$0 = (TR1 * MRN1) + (TR2 * MRN2)$$

and states that the sum could be zero as shown above. The only conditions that could satisfy the above statements are either both sides of the sum are zero or there is a negative torque or revolution of a motor. Hence, the first condition is the only workable condition in view of a motor operation. The rejection of claim 7-10 was based on the

above explanation and is maintained as the applicant argument did fail to show otherwise.

The arguments made by the applicant further indicate the deficiency stated in the earlier office action and as clearly indicated in the personal interview of June 16, 2005. As such, the rejection is maintained, but rewritten to further clarify the position of the examiner.

6. Applicant's argument and remarks are fully considered based on their merits. The claims are rejected/objected in view of applicant's argument and on the ground of arts presented herein.

**Claim Rejections - 35 USC § 112**

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claim 7-12 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The applicant teaches how the power of the motor generator and the motor could be calculated and the sum of the two values could be determined to be greater than or equal to zero. Neither the specification nor the claims clearly show how the power generated by the motor could be negative and further the sum could be zero. It is well known in the art that the only condition that a motor could have a zero output is when

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the motor is turned off. Thus, it is found by the examiner that the teaching is not enabling to one having ordinary skill in the art. In addition, disconnecting the power supply from the two neutral points as suggested in claim 7 and 10 will shut vehicle/the system completely. The examiner believes that the disclosure does not teach how the above-cited deficiencies could be overcome to enable the claims as claimed.

**Claim Rejections - 35 USC § 103**

- The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
  - The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:
    1. Determining the scope and contents of the prior art.
    2. Ascertaining the differences between the prior art and the claims at issue.
    3. Resolving the level of ordinary skill in the pertinent art.
    4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
8. Claims 1 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki et al (US 6,518,736; hereon referred as Sasaki) in view of Moriya et al (US 6,630,804; hereon referred as Moriya).

Sasaki teaches about a mechanical power outputting apparatus and inverter apparatus. Sasaki power output apparatus as contrasted from the prior arts and illustrated on figure 1 mainly constitute motor 522 (MG1 of figure 6), inverter 524 (INV1 of figure 6), and power supply 530 (30 of figure 6). The invention shows a first inverter (INV1, figure 6) and a motor (MG1, figure 6) with a power supply (30, figure 6) between the neutral point of said motor and the negative side of the DC bus. Further, the disclosure shows a second electric motor connected with said first motor for at least one of supplying and receiving electric power therebetween.

Sasaki patent, however, failed to show said first motor as having a 2Y motor with a first three-phase motor coil and a second three-phase motor coil functioning as stators, energization of said first and second three-phase motor coils being controlled respectively by a first inverter and a second inverter.

However, Moriya teaches about a driving apparatus that overcomes the deficiencies of the power output apparatus of Sasaki invention. The above said invention of Sasaki and its deficiency are clearly stated in the quote from Moriya as follows:

"A power output apparatus provided with a capacitor connected between a positive pole bus and a negative pole bus of an inverter circuit for applying a three-phase alternating current to an electric motor and a direct-current power supply connected between the positive pole bus or the negative pole bus of the inverter circuit and a neutral point of an electric motor..."

"However, in such a power outputting apparatuses, it is necessary to limit the voltage input to the inverter circuit, i.e. the voltage between the terminals of the capacitor, to a voltage within a range from the voltage of the

direct-current power supply to about three times the voltage of the power supply when the difference between the voltage of the positive and the negative buses viewed from the neutral point of the electric motor is considered. The electric motor can effectively be driven if the input voltage to the inverter circuit can be controlled according to the state of the electric motor.

However, driving efficiency of the electric motor is limited when the range of the input voltage is limited."

To overcome the above said deficiency, Moriya proposes a power output apparatus (20, figure 1) that contains a first inverter (32, figure 1), a second inverter (32, figure 1), and a 2y Motor (22, figure 1). Said 2y motor has a first three-phase motor coil (24, figure 1) and a second-phase motor coil (26, figure 1) functioning as stators, energization of said first and second three-phase motor coils being controlled respectively by said first and second inverters. Further, the disclosure shows a power supply (40, figure 1) connected between a first neutral point of said first three-phase motor coil and a second neutral point of said second three-phase motor coil.

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate Moriya invention into Sasaki invention in order to overcome the deficiencies of Sasaki power output apparatus as taught by Moriya.

Regarding claim 13, the aforementioned invention of Sasaki as modified by Moriya shows said power supply as a DC power supply.



**Allowable Subject Matter**

9. Claims 2-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**Conclusion**

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Refer to attached PTO-892 form.

**Remarks**

11. No claim is allowed. Five claims are objected. Eight claims are rejected.

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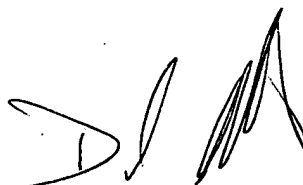
**Correspondence**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elias B. Hiruy whose telephone number is 571-272-6105. The examiner can normally be reached on 7AM- 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on (571) 272-2107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For

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more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'D M', located above the printed name of David Martin.

DAVID MARTIN  
SUPERVISORY PATENT EXAMINER  
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EH

09/30/2005